

W.H.O. PROJECT – STICKER No.SE 07/116447

**DEVELOPING JIPMER AS
HEALTH PROMOTION HOSPITAL**

PROJECT REPORT

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1. SUMMARY OF THE W.H.O. PROJECT STICKER No. SE 07/116447

The Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry, is an institute of national repute under the Ministry of Health and Family Welfare, Government of India with about 2,266 staff members and about 1,500 students residing in the campus.

The institute was sanctioned a W.H.O. Project – Sticker No.SE 07/116447, to develop JIPMER as a Health Promoting Hospital and the APW has been signed with the JIPMER hospital authority. The Project was started on 1-1-2007 and ended on 30-11-2007.

Under the project, utilizing the STEP I and STEP II WHO Questionnaire, risk profiling of JIPMER staff members identifying the NCD risk factors was done. Out of 2,266 staff members, 1900 participated in the study of answering the questionnaire (STEP I and STEP II), participated in the risk factor surveillance and got training in Yoga and other life style modifications as an appropriate intervention.

There was a female gender predominance. About 63% were vegetarians. The consumption of greens, vegetables and fruits were similar in vegetarians and non-vegetarians. However, fruit consumption was less in non-vegetarian group. Amongst the non-vegetarians, fish intake was higher compared to eggs or meat (white or red meat) consumption. Majority (50%) used hydrogenated oils as cooking medium. It was noted that 40% of the subjects were involved in sedentary jobs. In this study, 68% of the population did non-vigorous moderate intensity

physical activities. Very few individuals engaged in non-occupational related physical activities. Walking was the most preferred physical activity for the males and only 4% of the population were engaged in Yoga or Gardening as a source of recreation. Women preferred to watch TV for recreation. 3.3% of the population admitted to having consumed tobacco and 5% consumed alcohol.

A majority proportion of the study population (46%) had diabetes or hypertension and had either overweight or obesity. Females outnumbered males in this group. Hypertension was the most common abnormality, followed by diabetes.

About 150 posters have been prepared on the following aspects of NCD:

- 1. Ill effects of tobacco smoking**
- 2. Ill effects of consuming alcohol**
- 3. Prevention and control of diabetes**
- 4. Prevention and control of hypertension**
- 5. Prevention and early detection of cancer**
- 6. Prevention and control of overweight and obesity**
- 7. Ideal nutrition in various age groups**
- 8. Health promotion through physical activity and yoga**

2. INTRODUCTION

Life style related diseases like Diabetes, obesity, Hypertension and stress related disorders are on rise worldwide and India is no exception.

As per World Health Organization (WHO) projections, India will have 400 million Diabetics by 2012 and every 4th Diabetic in the world will be an Indian. Similarly, Hypertension and Obesity are becoming major Public health concerns. Tobacco in any form has to be avoided & is one of the major killer. Similarly alcohol consumption is a great medical & social malady & needs due attention. Cancer prevention & control depends on the public awareness , early diagnosis & appropriate preventive measures.

In this scenario, it is imperative that concerted effort has to be taken to make the public aware of these disorders and take corrective and preventive steps. In other words, steps have to be taken to promote positive health In this regard ministry Of health and family welfare, Government of India and world health organization (WHO) have come together to develop certain institutes of repute as health promoting hospitals. They will study the extent of this problem in a defined population, make appropriate IEC materials to disseminate information among public and advise interventions. The present project has been taken up by JIPMER to fulfill these objectives.

Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER) is a premier medical institution under the Ministry of Health and Family Welfare, Government of India.

This institute has been in forefront in the field of medical education, research and patient care.

Recognizing the presence of well trained experienced medical personnel who have vast experience in the field of diabetes and public health and availability of 3000 odd staff working in this hospital, WHO has signed a APW with JIPMER hospital authority to Develop JIPMER as Health Promoting Hospital With this the project has been undertaken.

AS per the APW, the duration of the project is 11 months, starting from 1st January 2007 till 30th November 2007.

3. AIMS AND OBJECTIVES

The main aim of the project is to develop JIPMER Hospital as a Health Promoting Hospital. The activities envisaged are:

- 1. Risk profiling of the staff of JIPMER using STEP-I and STEP-II NCD RISK Factors Surveillance Module**
- 2. Advising appropriate interventions to population at risk**
- 3. Developing IEC materials to propagate life style modification in relation to non communicable diseases like Diabetes, obesity, hypertension, etc.**
- 4. Utilizing these IEC materials in patient health education programmes**
- 5. Health awareness campaigns (Schools and Public Awareness)**

METHODOLOGY

JIPMER staff were categorized as follows:

GROUP A gazetted staff:	140
Group B gazetted staff:	20
Group c technical staff:	624
Nursing staff:	550
Group D staff:	932
Total:	2,266

AS per the APW, one YOGA Trainer was selected through an interview and appointed for a period of 11 months starting from 1st Feb 2007. There was delay of one month as the advertisement for the post appeared only on 9th January, 2007 and interview was held on 23rd January 2007. He started working from 1st February, 2007.

4. RISK PROFILING OF THE JIPMER STAFF MEMBERS

The initial step of the study was to sensitize the staff regarding the risk profiling. In order to sensitize each group of staff, a meeting was held with the representatives of each group. They were explained about risk profiling and interventions like physical activity, yoga, etc. A proforma was prepared using STEP-I and STEP-II NCD surveillance questionnaire, translated in the local language Tamil and 3000 copies of the same were made.

Daily screening of the staff members was started. On an average 24-30 staff members were screened using the above questionnaire (Annexure I). During the screening, the anthropometric measurements like height, weight, waist circumference and abdominal girth were noted. Their blood pressure and pulse rates were recorded and fasting blood glucose levels were measured.

In addition, food habits, daily physical activity, alcohol intake, tobacco consumption and treatment taken for hypertension, diabetes, etc., were noted in the proforma. A total of 1900 staff members were screened during the period of study and their risk profiling was done. The staff members found to be at risk during the study were advised appropriate interventions.

5. LIFE STYLE MODIFICATION INTERVENTIONS

Life style modification interventions were explained/demonstrated by the Yoga Trainer to the high risk individuals.

Disease specific yoga exercises, diet, lifestyle modifications and physical activity were undertaken by the staff members who had diabetes, hypertension or stress related disorders.

Till date, 1200 staff members have been trained.

The impact of these interventions on improvement in health parameters along term goal of the study is yet to be studied.

This is on-going process and in the next two years, the impact of the Yogic interventions and the life style interventions will be studied.

6. PREPARATION OF IEC MATERIALS

In consultation with experts, IEC materials were prepared in the field of diabetes, obesity, nutrition hypertension, physical activity, cervical cancer and tobacco consumption.

More than 150 charts, placards, cartoons and other materials have been prepared by the artists. These materials were made in English and Tamil.

In order to display these charts and cartoons in public places, banners of the size 3.5' x 2' were prepared.

All these IEC materials have been digitalized and stored in Compact Disks.

They were on the following:

- 1. Ill effects of tobacco smoking**
- 2. Ill effects of consuming alcohol**
- 3. Prevention and control of diabetes**
- 4. Prevention and control of hypertension**
- 5. Prevention and early detection of cancer**
- 6. Prevention and control of overweight and obesity**
- 7. Ideal nutrition in various age groups**
- 8. Health promotion through physical activity and yoga**

7. HEALTH AWARENESS CAMPAIGN (Schools and Public Awareness)

A series of talks by experts in the field of diabetes, obesity, physical activity and reproductive health and disease were arranged for the JIPMER staff.

One interactive Health Talk on Diabetes, Physical Activity and Diet was arranged in Kendriya Vidyalaya inside the JIPMER campus. This meeting was attended by the students of class 11th and 12th and the teachers of the school. Health check up and diabetes detection were done for all the 48 teachers and staff members and Step 1 and Step 2 NCD Questionnaires were administered to them and the results are given in Annexure – II.

8. RESULTS OF THE JIPMER STAFF RISK PROFILING

A total of 1900 people comprising of JIPMER hospital employees and their relatives were surveyed in this study. There was a slight predominance of females (992) as compared to men (902) (Table 1).

Table 1. Sex distribution of the Respondents

Male	Female	Total
908	992	1900

Although, the survey included people across all age groups, the majority were middle aged adults between 40-60 yrs of age (46.5 %). The young adults between 20-40 yrs comprised the next major group (33.2%) while people less than 20 yrs were a minority (4.7%). The sex distribution was more or less balanced in various age groups although there was a trend towards more females in the younger age groups (<60 yrs) and more men among the elderly. (Table 2)

Table 2. Age distribution of the Respondents

S No.	Age (yrs)	Male	Female	Total	%
1	< 20	44	46	90	4.7
2	20-40	270	360	630	33.2
3	40-60	416	467	883	46.5
4	60-80	178	119	297	15.6
Total		908	992	1900	

The survey included doctors, nurses, technicians and the group C and the group D workers and their family members. The group C and group D workers (unskilled workers / labourers) were the vast majority of people surveyed (61.8 %) (Table 3).

Table 3. Occupation of the Respondents

S No.	Occupation	Male	Female	Total	%
1	Professional / Executive / Big Business	20	25	45	2.4
2	Clerical / medium business	83	71	154	8.1
3	Self - employed/ skilled	59	72	131	6.9
4	Unskilled / landless labourer	627	547	1174	61.8
5	Student	58	51	109	5.7
6	Homemaker	6	176	182	9.6
7	Retired	33	32	65	3.4
8	Unemployed (able to work)	22	17	39	2.1
9	Unemployed (unable to work)	-	1	1	-
	Total	908	992	1900	

Majority of respondents in the study were unskilled workers / labourers with very little formal schooling. Only about 20 % of the population had completed college /university, while a majority (49.7 %) had studied only upto secondary school. A small group of individuals (7.1%) comprising mainly of females had received no formal education at all. (Table 4)

Table 4. Educational status of the Respondents

S.No	Level of Education	Male	Female	Total	%
1	No formal schooling	25	109	134	7.1
2	Less than primary school	27	43	70	3.7
3	Primary school completed	28	29	57	3.0
4	Secondary school completed	495	450	945	49.7
5	High school completed	145	138	283	14.9
6	College / University completed	166	213	379	19.9
7	Post graduate degree	22	10	32	1.7
	Total	908	992	1900	

As expected, 52.1 % of the population belonged to the low income group with a slightly lesser number (47%) in the middle income group. (Table 5)

Table 5. Socioeconomic status of the Respondents

	Low income	%	Middle income	%	High income	%
Male	600	31.6	305	16.1	3	0.1
Female	389	20.5	600	31.6	3	0.1
Total	989	52.1	905	47.7	6	0.2

The majority of the population surveyed (63.2%) was vegetarian with a regular consumption of green leafy vegetables and fruits. Among the non vegetarians, nearly half also consumed green leafy vegetables, which was no different from vegetarians. However, fruits consumption was found to be lower in nonvegetarians as compared to vegetarians. Fish was the most common non vegetarian food consumed followed by eggs, white meat and red meat respectively. (Table 6)

Table 6. Dietary Habits

S No.	Type of food	Vegetarian (n=1200) (63.2%)		Non vegetarian (n=700) (36.8%)	
		<4 Times / week	≥ 4 times/ week	< 4 times/ week	≥ 4 times/ week
1	Green leafy Vegetables	362	838	363	337
2	Fruits	200	1000	136	564
3	Dairy products (milk, curd, cheese)	944	256	128	572
4	Eggs	-	-	336	126
5	Fish	-	-	511	189
6	White meat (Chicken)	-	-	272	82
7	Red meat (Mutton, beef)	-	-	134	50

Hydrogenated vegetable oil was the most common cooking medium used (54.1%) followed by the use of refined oils(38.1%). Very few people (0.4 %) used ghee or butter as cooking medium (Table 7).

Table 7. Cooking medium used at home

S. No.	Type	Male	Female	Total	%
1	Vegetable oil [refined/unhydrogenated]	362	378	740	38.9
2	Vegetable oil [hydrogenated]	484	544	1028	54.1
3	Butter or ghee	2	5	7	0.4
4	Other	44	45	89	4.7
5	None in particular	16	20	36	1.9
	Total	908	992	1900	

At work place about 40 % of the population was sedentary with absent or minimal occupation related physical activity. Females outnumbered males in this group. About 48.2 % of the population was engaged in work that demanded moderate intensity / non vigorous physical activity. Another 11.8 % of the

population was engaged in work that demanded vigorous physical activity. This group mainly included males working as laborers/ unskilled workers. The unskilled laborers thus seem to comprise a heterogeneous group with varying degrees of exposure to work related physical activity.

Table 8. Occupation related Physical activity status

Sl No	Occupation	Sedentary (n= 761) (40%)				Nonvigorous activity (n=916) (48.2 %)				Vigorous activity (n=223) (11.8 %)			
		Male	Female	Total	%	Male	Female	Total	%	Male	Female	Total	%
1	Professional / Executive / Big Business	14	20	34	4.5	5	5	10	1.1	1	0	1	0.5
2	Clerical / medium business	52	50	102	13.4	25	21	46	5.0	6	0	6	2.7
3	Self - employed/ skilled	30	58	88	11.6	22	13	35	3.8	7	1	8	3.6
4	Unskilled / landless labourer	190	173	363	47.7	300	324	624	68.1	137	50	187	83.9
5	Student	11	30	41	5.4	36	19	55	6.0	11	2	13	5.8
6	Homemaker	1	61	62	8.2	5	108	113	12.4	7	0	7	3.1
7	Retired	20	25	45	5.9	12	7	19	2.1	1	0	1	0.4
8	Unemployed (able to work)	20	5	25	3.2	12	2	14	1.5	0	0	0	0
9	Unemployed (unable to work)	0	1	1	0.1	0	0	0	0	0	0	0	0
	Total	338	423	761		417	499	916		170	53	223	

Most of the people surveyed either preferred to walk (60.9 %), relax (59.6 %) or watch TV (58.3 %) during their leisure time. More men preferred to walk while women preferred to watch TV for recreation. Only 4.1 % of the population was into yoga or gardening as a source of recreation. (Table 9)

Table 9. Recreational activities

S No.	Activity	Male	Female	Total	%
1	TV watching	400	708	1108	58.3
2	Relaxing (>1 hr)	632	500	1132	59.6
3	Gardening	41	18	59	3.1
4	Yoga	50	28	78	4.1
5	Walking (>10 min)	687	470	1157	60.9
6	Games	65	15	80	4.2
7	Cycling	21	15	36	1.9
8	Gym exercise	12	10	22	1.2

During their free time, 68.1 % of the study population was involved in some sort of non vigorous moderate intensity physical activity apart from the usual work related physical activity. A significant number (24.6 %) had little or no physical activity apart from work. This group mainly comprised of females. Very few individuals (7.3%) engaged in non occupation related vigorous physical activity. (Table 10)

Table 10. Non-occupation related Physical activity status

S No.	Sedentary (n=468) (24.6 %)				Nonvigorous activity (n=1294) (68.1%)				Vigorous activity (n=138) (7.3 %)			
	Male	%	Female	%	Male	%	Female	%	Male	%	Female	%
1	110	23.5	358	76.5	700	54.1	594	45.9	98	71.0	40	29

A small proportion (3.3 %) of the study population used tobacco, all being males. Tobacco use was non existent among females. (Table 11)

Table 11. Tobacco use among Respondents

	Tobacco users		Total	%	Non users		Total	%
	Males	Females			Males	Females		
	63	0	63	3.3	845	992	1837	96.7
Total							1900	

Amongst tobacco users, 24 of the 63 males smoked beedis while another 20 smoked cigarettes and the remaining 19 used other smokeless forms of tobacco. Thus, smoking of either beedi or cigarettes was the commonest form of tobacco consumption. (Table 12)

Table 12. Pattern of tobacco use

S No.	Smokers						Smokeless tobacco products			
	Beedi		Cigarette		Total	%	Males	Females	Total	%
	Males	Females	Males	Females						
	24	0	20	0	44	69.9	19	0	19	30.1

94.3 % of the people in the survey population were teetotalers, while the remaining 109 (5.7 %) admitted to some form of alcohol consumption. Most of them consumed alcohol 1-3 times /week or less. Only few confessed to taking alcohol on regular basis (more than 5 times/week). (Table 13)

Table 13. Frequency of Alcohol consumption

No consumption				Consuming alcohol						
Females	Males	Total	%	>5 days/ week	1-4 days / week	1-3 days / month	< 1 / month	Total	%	
992	799	1791	94.3	10	42	22	35	109	5.7	

Most of the persons taking alcohol, 98.2 % consumed Indian made foreign liquor (IMFL) followed by country liquor (arrack) (36.7 %) and beer (24.8 %).

(Table 14)

Table 14. Type and amount of alcohol consumed

Beer		Total	%	IMFL		Total	%	Country liquor (Arrack)		Total	%
<750 ml	>750 ml			≤60 ml	> 60 ml			≤ 60 ml	> 60 ml		
12	15	27	24.8	51	56	107	98.2	25	15	40	36.7

Of the 1900 people surveyed, 1025 people (54%) were absolutely normal without any co- morbidity. The remaining 46 % of the population had either diabetes or hypertension or were either overweight or obese. Females outnumbered males in the latter group. (Table 15)

Table 15. Health status

Numbers	Healthy	Total	%	Not healthy	Total	%
(n=908)	Male	486	53.5	Male	422	46.5
(n=992)	Female	539	54.3	Female	453	45.7
(n=1900)	Total	1025	54	Total	875	46

Hypertension was the most common abnormality detected in the survey population (37.2 %) followed by diabetes (24.2 %). 15 % of the surveyed population had both diabetes and hypertension. Hypertension was more common in

males while diabetes was equally distributed in the two groups. Obesity (BMI > 30kg /m2) was seen in only 1.3 % of the population. (Table 16)

Table 16. Diseases detected in unhealthy individuals

Numbers	Gender	Diabetes	%	Hypertension	%	Obesity	%
908	Male	233	25.6	377	41.5	10	1.1
992	Female	226	22.8	330	33.3	15	1.5
1900	Total	459	24.2	707	37.2	25	1.3

86.3 % of the diabetics had their sugars under control .There was no significant difference in the control between the two sexes. (Table 17)

Table 17. Diabetes control status

Numbers	Gender	Controlled	%	uncontrolled	%
(n=233)	Male	205	87.9	28	12.1
(n=226)	Female	191	84.5	35	15.5
(n=459)	Total	396	86.3	63	13.7

3.5 % of the hypertensives had their blood pressure under control, the control being slightly better among females. (Table 18)

Table 18. Hypertension control status

Numbers	gender	Controlled	%	uncontrolled	%
377	Male	300	79.6	77	20.4
330	Female	290	87.9	40	12.1
707	Total	590	83.5	117	16.5

A little more than half of the population surveyed (53.4 %) had a normal body mass index (BMI). However, another 42 % of the population was over weight. this group had more females than males. A small number (3%) of the population had a BMI <18 and a even smaller number (1.3%) was obese with a BMI >30.the sex distribution was similar in both these groups. (Table 19)

Table 19. Body mass index (BMI)

S No.	BMI	Male	Female	Total	%
1	< 18	33	30	63	3.3
2	18 - 25	537	477	1014	53.4
3	25 - 30	383	415	798	42
4	> 30	10	15	25	1.3
		963	937	1900	

9. GIST OF THE FINDINGS OF THE STUDY

The highlights of the health survey were as follows:

- 1. A total of 1900 people comprising of JIPMER hospital employees and their relatives were recruited in the study.**
- 2. there was almost an equal representation of the sexes with a slight female predominance.**
- 3. Majority of the respondents were middle aged adults.**
- 4. Unskilled workers or laborers formed the major group of people surveyed.**
- 5. formal education was poor in the survey population with only 20 % of the population having completed college and above. About half of the survey population had completed only secondary school.**
- 6. The survey population was predominantly vegetarian, about 63 %. The consumption of green leafy vegetables and fruits was similar in vegetarian and nonvegetarian groups. However, fruit consumption was less in nonvegetarian group.**
- 7. Among non vegetarian population fish intake was higher compared to eggs, white or red meat consumption.**
- 8. Majority of the respondents (54 %) use hydrogenated oils as cooking medium.**
- 9. A significant portion of the study population (40%) was involved in work that had little or no physical activity (sedentary).**

- 10. During their free time, 68.1 % of the study population was involved in some sort of non vigorous moderate intensity physical activity apart from the usual work related physical activity. Very few individuals engaged in non occupation related vigorous physical activity.**
- 11. Men preferred to walk while women preferred to watch TV for recreation. Only 4 % of the population was into yoga or gardening as a source of recreation.**
- 12. Only 3.3 % of the survey population admitted to having consumed tobacco in some form or the other. Beedi smoking was the most common form of tobacco consumption.**
- 13. Only 5 % of the people surveyed consumed alcohol. Indian made foreign liquor was the obvious choice followed by beer and arrack. Only a few were taking alcohol on regular basis.**
- 14. A large proportion of the studied population (46 %) had either diabetes, hypertension or were either overweight or obese. Females outnumbered males in this group.**
- 15. Hypertension was the most common abnormality detected followed by diabetes.**
- 16. Even though only 1 % of the population surveyed was obese, a significant number was overweight probably accounting for the high prevalence of hypertension and diabetes in the population.**